

Work Order ID 146584

146584

Page 1

Thursday, May 19, 2016 2:55:43 PM

Item ID: D2888

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Lug

Start Date: 5/9/2016 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 5/19/2016 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: MCJ Date: MAY 24 2016

Tooling:

Date:

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2888	Rev A2								
100		0.00							DAS 33 9-89 <u>16/06/21</u>
100						4	0		
Bandsaw	Memo	0.00							
Jeaspa Bandsaw	Cut Blanks at 4.200" long ***Grain along 4.200"****								
110		1.59							DAS 33 9-89 <u>16/06/30</u>
110						4	0		
HAAS 1	Memo	1.80							
HAAS CNC vertical machine #1	Machine as per Folio D2888 Folio Rev: <u>AA</u> Dwg Rev: <u>A 2</u> 2-Deburr								

DQA: Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. _____		Rework ☐		Skid-tube ☐		Cross tube ☐		Water Jet ☐		Engineering ☐	
NCR No. _____		Scrap ☐		Machining ☐		Small Fab ☐		Prod. Eng. Coord. ☐		Quality ☐	
		Use-as-is ☐		Thermoforming ☐		Finishing ☐		Rec/Store/Packaging ☐		Other ☐	
		Suspected Unapproved ☐		Large Fab ☐		Composite ☐		Supplier ☐			
Date :		Step #:			QTY Effective :				MRB (QSI042) Approval		
Description Work Order Deviation					Disposition					Completed By	
										Lead hand / Supervisor Approval Verification	
										QC / QA Coordinator Approval	
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐					FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Power Loss/Surge ☐ Positioned Wrong ☐ Bending ☐ Set-up ☐ Folio/Program ☐ Outside Dimensions ☐ Centre Not Concentric ☐ BOM/Route ☐ Grain ☐ Over/Under tolerance ☐ Cracks ☐ Broken/Damage/Defect ☐ Weld ☐ Part Incorrect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Cuffs ☐ Contamination ☐ Out of Sequence ☐ Part Moved ☐ Crushing ☐ Countersink ☐ Off-set ☐ Drawing ☐ Heat Treat ☐ Cut Too Short ☐ Mislabeled ☐ Finish ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Fit/Function ☐ Misread ☐ Marks/Chatter ☐ Drill Holes ☐ Misaligned/off center ☐ Turning Sequence ☐						
OTHER :											

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Work Order ID 146584

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146584

Page 3

Item ID: D2888 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Lug
 Start Date: 5/9/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 5/19/2016 Req'd Qty: 4.00 ***4*** Customer:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per OSI005 4.3-Alum <i>M 134631</i> Memo START TIME: <i>10:00</i> OVEN TEMPERATURE: <i>320°</i> FINISH TIME: <i>10:30</i>	0.00 0.12				<i>4</i>	<i>0</i>	<i>16-07-8</i>	<i>38</i>
160 *160* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.04				<i>(4)</i>			<i>38</i> <i>9-89</i> JUL 11 2016
170 *170* Packaging Packaging	Identify as per dwg & Stock Location <i>5107</i> Memo	0.00 0.04				<i>(4)</i>	<i>PE</i>		<i>6</i> <i>9-89</i> JUL 12 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Work Order ID 146584

Thursday, May 19, 2016 2:55:43 PM

146584

Page 4

Item ID: D2888

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Lug

Stop ***NS2***

Start Date: 5/9/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 5/19/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.40

Quality Control

16/7/12 JH

DAS

21 JUL 12 2016

9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

Picklist Print

Thursday, May 19, 2016 2:55:43 PM

Page 1

Work Order ID: 146584

146584

Parent Item: D2888

D2888

Parent Item Name: Lug

Start Date: 5/9/2016

Required Date: 5/19/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP C00.06.22Removed P/O for powder coatEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B2.500X03.50 0		Purchased	No			100	f	10.4290	0.39	1.56			

M6061T6B2 500X03 500

6061-T6 Bar 2.50 x 3.50

DAS
33
9-89

16/06/29

Location

Loc Qty

Loc Code

MAT004

10.429

m132772

0.3827

m133265

0.6263

m134776

9.42

1.43

DQA: _____ Date: _____

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DART AEROSPACE LTD		Work Order: 146584
Description: Lug		Part Number: D2888
Inspection Dwg: D2888	Rev: A2	Page 1 of 1

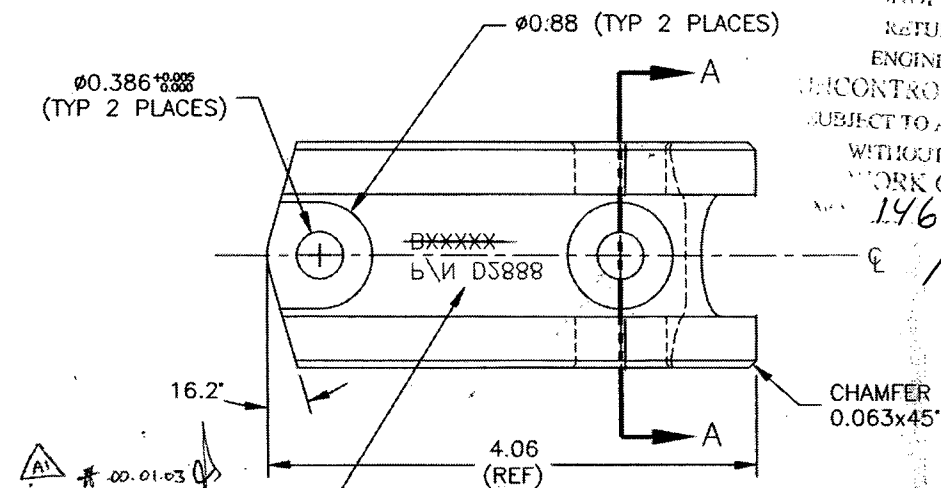
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.386	+0.005/-0.000	0,389	✓		MIP-04	vern
Ø0.88	+/-0.030	0,877	✓			
0.063 x 45°	+/-0.010	0,062 x 45°	✓			
4.06	+/-0.030	4,063	✓			
Ø0.760	+0.005/-0.000	0,762	✓			
3.48	+/-0.030	3,480	✓			
2.500	+/-0.010	2,500	✓			
2.75	+/-0.030	2,750	✓			
0.438	+/-0.010	0,434	✓			
0.080 x 45°	+/-0.010	0,080 x 45°	✓			
1.85	+/-0.030	1,850	✓			
1.000	+/-0.010	1,006	✓			
0.425	+/-0.010	0,423	✓			
0.030 x 45°	+/-0.010	0,030 x 45°	✓			
1.875	+/-0.010	1,872	✓			
0.375	+/-0.010	0,375	✓			
R0.25	+/-0.030	0,250	✓			
1.29	+/-0.030	1,284	✓			
0.414	+/-0.010	0,404	✓			
3.41	+/-0.030	3,398	✓			

Measured by: DAS 33 Date: 9-89 16/06/30	Audited by: DAS 49 Date: 9-89 16/07/04	Prototype Approval: N/A Date: N/A
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Rev	Date	Change	Revised by	Approved
A	08.06.04	New Issue	KJ/DD	



ENGRAVE DART PART NUMBER AND BATCH NUMBER IN THIS AREA ON BOTTOM SURFACE

ENGRAVE DART LOGO IN THIS AREA, 0.50 HIGH x 0.010 DEEPLLETTERING

CP 00.10.31

GRAIN DIRECTION

0.080x45° CHAMFER

0.438

2.75

2.500

3.48

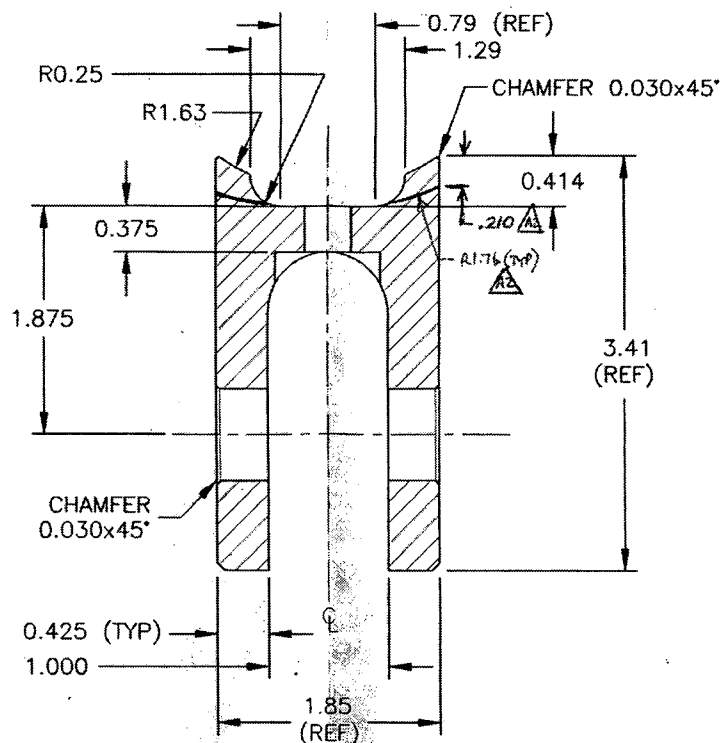
R.37

ENGRAVE P/N (REF)

STOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

146584 ML

160524



SECTION A-A
SCALE 1:1

RELEASED
99.07.09 BS

MATERIAL: 6061-T6 (QQ-A-200/8 OR QQ-A-250/11 OR QQ-A-225/8)

FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1

POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3

BREAK UNMARKED EDGES 0.010 TO 0.020

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

A2	04.04.08	Add Saddle Clearance for NCR 754
A1	00.10.31	Update Engraving

DESIGN	99.06.21	NEW ISSUE
CHECKED	DRAWN BY CP	DART DART AEROSPACE LTD HARRISBURG, ONTARIO, CANADA
APPROVED	IE	DRAWING NO. D2888
DATE	99.06.21	TITLE LUG
		REV. A SHEET 1 OF 1 SCALE 1:1